

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P242484

Luminaire Tested: **S123DR-S1000D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242484
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-S1000D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3419.9 lumens
Efficiency: N/A
Efficacy: 98.3 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

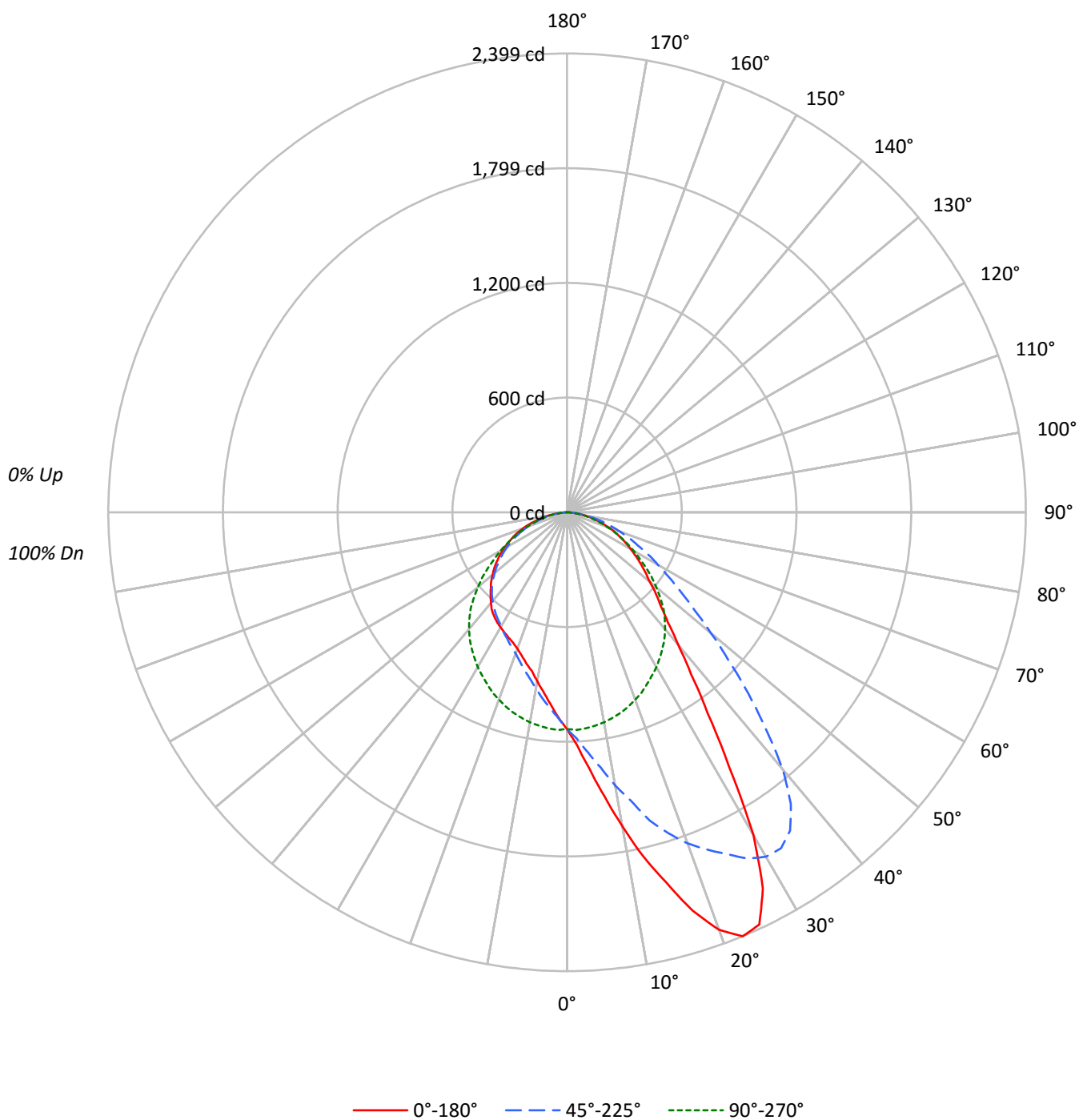
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		100
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		85
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72		72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53		53
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47		47
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41		41
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36		36
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33		33
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29		29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27		27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	13735	13735	13735
5°	16379	13793	12223
10°	20501	13724	11040
15°	25144	13613	10279
20°	29953	13440	9787
25°	31805	13230	9676
30°	27261	13077	9727
35°	18960	12859	9830
40°	14280	12605	9798
45°	11857	12224	9673
50°	10620	11450	9585
55°	9930	10615	9467
60°	9316	9741	9370
65°	8754	8880	9069
70°	8211	7900	8637
75°	7353	6917	7919
80°	6436	5668	6820
85°	5035	4117	4576

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.4	3.3
10°-20°	357.9	10.5
20°-30°	602.2	17.6
30°-40°	680.6	19.9
40°-50°	609.6	17.8
50°-60°	492.1	14.4
60°-70°	342.9	10.0
70°-80°	180.0	5.3
80°-90°	43.1	1.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1071.6	31.3
0°-40°	1752.2	51.2
0°-60°	2854.0	83.5
0°-90°	3419.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3419.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1133	1133	1133	1133	1133	
5°	1346	1262	1134	1027	1005	138
15°	2004	1668	1085	855	819	578
25°	2378	1971	989	735	724	1051
35°	1281	2032	869	649	664	827
45°	692	1340	713	556	564	546
55°	470	727	502	429	448	422
65°	305	408	310	292	316	304
75°	157	193	148	147	169	168
85°	36	42	30	29	33	44
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1
2.5°	1219.8	1218.7	1216.0	1218.2	1213.8	1207.7	1207.2	1201.7	1185.8	1184.7	1180.3
5°	1346.1	1341.7	1341.1	1340.6	1332.9	1322.5	1302.7	1301.1	1274.7	1261.5	1245.6
7.5°	1498.7	1497.0	1492.7	1487.7	1461.9	1449.3	1430.6	1406.5	1375.7	1346.1	1327.4
10°	1665.6	1683.7	1661.2	1645.8	1631.5	1604.6	1573.4	1534.4	1495.4	1449.8	1415.2
12.5°	1844.5	1851.1	1851.1	1836.9	1812.7	1768.2	1706.8	1662.8	1627.7	1544.3	1514.6
15°	2003.7	2037.2	2015.8	1966.4	1967.5	1928.5	1856.1	1776.5	1734.2	1667.8	1577.2
17.5°	2183.8	2189.8	2183.3	2137.1	2114.6	2058.1	1992.8	1918.7	1839.1	1758.4	1664.5
20°	2322.1	2318.9	2299.6	2278.2	2231.0	2189.3	2116.3	2031.2	1921.4	1842.3	1737.5
22.5°	2399.0	2393.0	2386.4	2369.4	2332.0	2286.5	2222.8	2127.8	2024.6	1908.2	1783.1
25°	2378.1	2385.3	2386.4	2381.4	2367.7	2340.8	2289.2	2215.1	2110.8	1970.8	1844.5
27.5°	2216.7	2234.9	2257.9	2273.3	2298.0	2314.5	2298.0	2251.3	2165.7	2040.5	1885.2
30°	1947.7	1925.8	1980.1	2048.8	2095.4	2177.8	2223.9	2226.6	2183.3	2079.5	1929.1
32.5°	1574.4	1610.1	1626.6	1715.0	1830.8	1925.8	2029.0	2120.7	2142.1	2081.7	1954.9
35°	1281.3	1311.5	1355.4	1399.3	1509.1	1603.5	1764.9	1905.5	2017.5	2032.3	1951.6
37.5°	1065.0	1082.6	1109.5	1156.1	1231.3	1348.3	1476.2	1659.0	1813.3	1921.9	1911.0
40°	902.5	906.9	938.2	971.7	1029.9	1122.1	1234.6	1391.6	1586.0	1754.5	1824.8
42.5°	780.6	791.6	800.4	832.2	875.6	939.3	1041.9	1164.9	1338.9	1539.3	1693.6
45°	691.7	702.7	710.9	732.3	765.3	811.9	884.9	1003.5	1139.1	1339.5	1524.5
47.5°	630.2	629.1	636.3	653.3	676.9	714.2	768.0	847.1	977.2	1144.6	1338.4
50°	563.2	572.0	574.2	586.9	604.4	630.2	673.0	737.8	839.9	982.7	1157.2
52.5°	516.0	517.1	524.3	532.5	547.3	566.0	601.7	648.9	723.5	839.9	996.9
55°	469.9	469.9	476.0	483.1	491.9	510.0	534.7	572.0	633.0	727.4	860.2
57.5°	427.1	429.3	434.8	436.4	444.1	456.7	478.2	507.8	554.5	630.8	740.6
60°	384.3	389.2	388.7	393.1	399.7	409.0	426.6	449.6	490.2	548.4	637.4
62.5°	346.9	345.3	345.3	350.8	357.4	366.2	376.0	395.3	428.2	478.2	550.6
65°	305.2	304.1	308.0	311.3	313.5	320.1	328.8	346.4	369.5	407.9	466.6
67.5°	269.0	265.7	268.4	269.5	273.4	278.9	287.7	298.6	317.3	349.7	396.9
70°	231.7	228.9	228.4	229.5	232.8	236.6	242.6	253.1	270.1	294.8	327.2
72.5°	193.2	191.6	191.6	194.3	195.4	197.6	201.5	210.8	223.4	240.4	270.1
75°	157.0	157.0	157.0	157.6	159.2	161.4	164.7	169.6	180.1	193.2	213.5
77.5°	124.1	124.6	123.5	123.0	125.7	126.8	127.4	132.9	138.9	148.8	164.7
80°	92.2	89.5	90.6	92.2	93.3	93.9	95.5	96.6	101.6	106.5	116.9
82.5°	62.6	60.4	60.4	63.1	63.1	63.7	65.3	67.0	68.1	72.5	76.9
85°	36.2	36.2	36.8	36.8	37.3	36.8	38.4	39.0	39.0	41.7	45.0
87.5°	16.5	15.4	15.9	16.5	15.9	16.5	17.0	17.6	18.1	18.7	19.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1
2.5°	1177.0	1172.6	1168.2	1160.5	1153.9	1144.6	1141.9	1138.6	1128.7	1119.9	1113.3
5°	1239.6	1226.4	1207.2	1189.6	1175.3	1156.1	1145.2	1133.6	1117.2	1102.3	1090.3
7.5°	1299.4	1276.4	1249.5	1220.4	1192.4	1165.5	1144.1	1124.8	1103.4	1082.6	1066.7
10°	1373.5	1336.2	1294.5	1249.5	1211.0	1173.7	1142.4	1115.0	1085.3	1059.5	1038.1
12.5°	1458.1	1398.2	1336.7	1279.7	1232.4	1177.0	1137.5	1100.7	1066.1	1033.7	1009.0
15°	1521.2	1450.9	1382.9	1307.6	1238.5	1173.7	1128.7	1084.8	1045.8	1013.9	983.2
17.5°	1583.8	1506.9	1420.2	1329.6	1248.4	1173.7	1112.2	1065.0	1017.2	978.8	949.2
20°	1635.4	1544.8	1443.2	1348.3	1256.0	1170.4	1101.2	1041.9	989.2	948.1	913.5
22.5°	1679.9	1570.1	1464.1	1360.9	1255.5	1161.6	1080.9	1019.4	961.2	921.2	883.8
25°	1707.8	1581.0	1475.6	1356.5	1241.8	1146.3	1058.4	989.2	932.2	884.9	847.1
27.5°	1734.2	1579.4	1460.3	1331.8	1225.3	1130.3	1035.9	961.8	902.0	850.9	811.9
30°	1760.6	1582.1	1433.4	1306.6	1199.0	1100.1	1009.0	934.3	870.7	818.5	782.3
32.5°	1777.0	1580.5	1408.7	1271.4	1157.2	1072.7	979.9	902.0	836.1	785.0	750.4
35°	1781.4	1571.2	1379.6	1220.4	1111.7	1026.6	949.2	869.0	800.4	752.6	713.1
37.5°	1772.1	1554.1	1347.7	1174.2	1056.8	972.2	904.7	836.1	770.2	717.0	682.4
40°	1741.9	1537.7	1309.3	1124.8	999.7	919.0	863.5	796.6	731.8	681.8	650.0
42.5°	1684.2	1504.2	1267.0	1069.9	940.4	859.7	809.7	756.5	696.1	650.0	618.1
45°	1583.2	1452.6	1224.8	1015.0	882.2	798.8	753.7	713.1	657.7	612.1	584.7
47.5°	1454.2	1382.9	1163.8	957.4	821.3	740.6	693.4	659.9	616.5	579.7	552.8
50°	1318.6	1292.8	1101.8	898.1	760.3	681.8	636.8	607.2	578.1	541.3	517.1
52.5°	1162.2	1188.5	1029.3	836.6	698.3	621.4	579.7	557.8	532.0	503.4	483.1
55°	1017.2	1074.9	943.7	766.4	636.8	563.2	523.2	502.3	486.9	464.4	446.3
57.5°	876.7	950.3	854.7	695.5	576.4	512.2	472.7	449.1	439.2	426.6	411.7
60°	754.3	826.8	758.1	624.2	515.5	455.1	421.1	401.8	392.0	383.7	371.7
62.5°	645.0	718.6	663.7	551.7	455.6	400.7	372.2	353.5	346.4	343.1	333.2
65°	546.8	609.9	571.5	476.0	399.1	349.7	322.8	309.6	302.5	300.8	294.2
67.5°	461.7	510.5	480.9	409.0	346.4	301.4	277.8	266.3	260.2	259.7	254.2
70°	378.2	423.3	401.8	338.2	286.0	252.5	232.8	222.9	219.6	219.0	216.3
72.5°	313.5	341.5	325.5	275.0	237.7	208.1	194.9	184.5	180.6	181.7	180.1
75°	241.5	265.2	255.3	218.5	186.1	166.3	154.3	147.7	144.4	146.0	143.8
77.5°	184.5	200.9	191.0	163.0	142.2	127.4	118.0	113.6	110.3	110.3	109.2
80°	131.2	140.0	135.0	119.7	103.2	91.1	84.0	81.2	79.6	79.1	78.5
82.5°	84.0	91.1	85.1	75.8	65.9	59.8	56.5	52.7	51.6	52.2	51.6
85°	47.2	50.0	47.8	41.2	36.8	33.5	31.3	29.6	28.5	29.1	28.0
87.5°	20.3	20.9	19.2	17.0	15.9	14.3	14.3	13.2	12.1	12.1	11.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1	1133.1
2.5°	1109.5	1105.6	1100.1	1091.9	1085.3	1074.9	1074.9	1076.5	1076.5	1076.0	1074.9
5°	1080.4	1072.1	1062.3	1050.7	1038.7	1026.6	1024.4	1020.0	1016.7	1014.5	1011.8
7.5°	1050.7	1037.0	1023.3	1007.4	993.6	982.1	973.9	966.7	962.3	957.4	953.6
10°	1020.5	1002.4	985.4	968.4	949.7	934.9	925.6	919.0	914.0	909.6	907.4
12.5°	984.9	963.4	944.2	928.3	907.4	892.1	883.3	881.1	875.1	864.6	859.1
15°	950.3	931.1	908.5	883.8	874.0	855.3	844.9	839.9	836.6	829.5	827.3
17.5°	921.7	895.9	870.1	852.0	833.9	819.1	813.0	806.4	802.0	795.5	793.8
20°	886.0	863.5	840.5	820.7	801.5	785.0	780.1	775.7	771.3	768.6	766.4
22.5°	849.8	827.3	809.2	791.1	770.2	760.9	755.4	750.4	747.7	746.1	743.9
25°	816.3	796.6	775.1	758.7	742.2	735.1	731.8	729.0	726.8	724.1	723.5
27.5°	786.7	764.7	746.6	730.7	718.6	712.6	708.7	707.1	707.1	708.2	708.7
30°	752.6	732.9	718.6	705.4	694.4	689.0	688.4	688.4	690.6	691.2	692.3
32.5°	721.3	706.0	691.7	679.1	671.4	668.1	670.8	670.8	672.5	674.1	676.3
35°	691.2	676.9	665.9	654.9	647.8	649.4	650.5	651.6	654.4	657.7	659.9
37.5°	662.6	649.4	637.9	629.1	624.7	628.0	630.8	633.0	636.3	639.0	641.2
40°	631.3	622.0	611.0	603.3	604.4	606.1	608.3	611.0	613.7	615.4	617.6
42.5°	602.2	592.3	584.7	578.6	580.3	582.5	583.6	584.7	587.9	591.2	592.3
45°	572.6	564.9	557.2	553.4	554.5	555.6	556.7	558.3	561.0	563.2	563.8
47.5°	539.1	533.6	528.7	524.3	526.5	525.9	527.6	530.9	532.0	533.1	536.3
50°	507.2	502.3	496.3	495.2	495.2	495.2	495.7	500.1	500.1	502.3	504.5
52.5°	472.1	469.4	466.1	463.9	462.8	462.8	465.5	467.2	468.3	471.6	473.8
55°	437.5	434.2	430.9	429.3	428.2	429.3	433.7	434.8	437.5	439.2	440.8
57.5°	401.3	399.1	396.4	395.3	395.3	395.8	399.1	401.8	402.4	407.9	410.1
60°	365.6	361.8	359.6	359.6	358.5	363.4	362.3	367.8	368.9	372.2	376.0
62.5°	328.8	323.3	322.8	322.8	325.0	325.5	327.7	329.4	332.7	337.1	339.8
65°	288.8	286.0	289.9	289.3	288.2	291.5	291.5	294.2	297.5	301.4	307.4
67.5°	251.4	249.2	250.3	249.8	251.4	253.6	255.3	257.5	261.3	265.7	269.5
70°	213.5	215.2	212.5	214.6	216.3	216.8	217.9	221.2	225.6	228.4	232.8
72.5°	176.8	176.2	177.3	177.9	179.5	180.6	181.7	185.6	190.5	192.7	196.0
75°	141.6	141.1	142.7	142.7	145.5	146.6	147.7	149.3	153.7	157.0	159.8
77.5°	109.8	110.3	109.8	112.0	110.9	111.4	114.7	116.4	116.9	124.1	125.2
80°	78.0	79.1	79.6	80.1	80.7	79.6	83.4	85.1	85.1	88.9	91.7
82.5°	50.5	51.1	52.7	53.3	53.3	54.9	54.3	55.4	57.1	58.2	62.0
85°	28.0	29.6	30.2	29.6	30.2	29.1	30.7	31.3	31.8	31.8	31.8
87.5°	11.0	11.5	11.0	11.5	11.0	11.5	11.5	10.4	10.4	12.1	9.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P242484

CATALOG NUMBER: S123DR-S1000D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1133.1	1133.1	1133.1	1133.1
2.5°	1071.0	1070.5	1074.3	1071.6
5°	1008.5	1010.1	1004.6	1004.6
7.5°	951.9	949.7	950.3	946.4
10°	900.9	897.6	896.5	897.0
12.5°	858.6	858.6	849.8	849.8
15°	827.3	816.9	815.8	819.1
17.5°	792.7	786.7	787.2	786.1
20°	766.4	763.1	762.5	758.7
22.5°	742.2	741.7	742.2	737.8
25°	723.0	725.7	723.5	723.5
27.5°	709.8	709.8	708.2	708.2
30°	694.4	693.9	695.0	695.0
32.5°	679.1	680.2	680.2	680.7
35°	663.2	663.7	665.4	664.3
37.5°	642.3	645.0	644.5	645.6
40°	618.1	619.8	619.2	619.2
42.5°	593.4	594.5	592.9	591.8
45°	566.0	564.9	566.5	564.3
47.5°	535.8	536.3	536.9	539.1
50°	505.6	508.9	508.9	508.3
52.5°	476.0	477.1	479.8	479.8
55°	445.2	446.3	447.4	448.0
57.5°	413.9	413.4	415.6	416.1
60°	380.4	380.4	384.8	386.5
62.5°	344.8	346.9	351.3	348.0
65°	310.2	314.6	314.0	316.2
67.5°	273.9	276.7	281.1	281.1
70°	237.2	239.9	242.1	243.7
72.5°	201.5	202.6	208.6	205.3
75°	163.6	167.4	170.7	169.1
77.5°	127.4	132.3	133.4	131.8
80°	95.5	95.0	98.3	97.7
82.5°	63.7	63.1	64.2	64.8
85°	34.0	35.7	33.5	32.9
87.5°	9.9	9.9	9.3	8.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)